

Corruption, governance and economic growth in Sub-Saharan Africa: a need for the prioritisation of reform policies

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Corruption, Governance and Economic Growth: Insights from Sub-Saharan Africa

Abstract

Purpose - The general objective of this study is to investigate the impact of governance indices (especially control of corruption) on economic growth in some selected Sub-Saharan African (SSA) countries for the period 2002 to 2009. Specifically, the study attempts to assess whether governance reforms (especially those relating to control of corruption) have any impact on the economic growth in SSA countries. It also examines whether simultaneous policy reforms have any impact on economic growth in the region.

Design/Methodology/Approach – The governance indices used in this study were drawn from the PRS Group and the World Governance Indicators for the period of 2002 to 2009 while the real GDP per capita growth data were obtained from the World Bank Database. The study covered forty-seven Sub-Saharan African countries and it adopted the panel data framework, the fixed effect, the random effect and the maximum likelihood estimation techniques for the analyses.

Findings - The study found that political stability and regulatory quality indices have growth enhancing features, as they impact on economic growth in the region significantly, while government effectiveness impacts negatively on the economic growth in the region. Despite several anti-corruption policies in the region, the impact of corruption control on economic growth is not very obvious. The study also found that simultaneous implementation of accountability and rule of law indicators has more positive impact on economic growth in the region. Both policies are complementary, and hence can be pursued simultaneously.

Research Implications - The results suggest that reform efforts that aim at enhancing accountability, regulatory quality, political stability and the rule of law have more growth enhancing features and thus should be given more priority, than reform efforts that singly address the issue of control of corruption, since corruption in the region tends to be endemic, systemic and ubiquitous.

Originality/Value – Many previous studies attempt to see the impact of corruption on economies, but this paper tries to assess the reform efforts, governance indices as they impact on economic growth in the most vulnerable region of the world, the Sub-Saharan Africa. Besides, the study adopts the panel data framework which makes it possible to allow for differences in the form of unobservable individual country effects. The use of this unique framework is uncommon in the current corruption-governance-growth literature.

Keywords: *Governance, Economic Growth, Sub-Saharan Africa, Panel Data Framework*

JEL CLASSIFICATION: *G28, O40, O55, C23*

Introduction

Aggregate economic performance in Sub-Saharan Africa during the past decade has remained unsatisfactory, in contrast to robust performance of other developing countries elsewhere. This unsatisfactory performance has been attributed to a number of factors which can be classified into two, exogenous and endogenous factors. The external or exogenous factors

include global financial crisis, unfavourable terms of trade, among others, while the internal or endogenous shocks include inappropriate and inconsistent policy regimes, corruption, ethnic conflicts and protracted civil wars, political instability, adverse security conditions, and complex administrative and institutional frameworks and weak institutions etc. All the endogenous or internal factors are often related to governance issues.

For many SSA countries, the effects of these adverse external developments have been compounded, by the weak governance structure in the region and central to these problems is the issue of corruption. Corruption has become an endemic problem in the region with its attendant negative impact on the regional economic performance.

In many developing countries, especially the sub-Saharan countries (SSA), governance has been a great challenge in harnessing domestic investment (at least from private sector) and attracting foreign inflows for growth. This is further worsened by long history of poor and bad governance. Akanbi (2010) supported this position when he asserted that poor governance which is reflected in the unstable political environment in many African countries has been a major hindrance to increasing domestic investment over the years.

However, since early 21st century the attention and focus of policy makers, government and international funding agencies is on how to improve and strengthen governance in many countries so as to attract foreign investment, aids and debt forgiveness and enhance international economic relations. All the aforementioned are sometimes tied to level of governance, this couple with the fact that governance is posited to have impact on economic growth further exacerbates increasing pressure on many governments to focus on how to improve their governance measures or policy reforms so as to enhance economic growth and development.

This paper thus focuses mainly on impacts of governance indicators (especially control of corruption, rule of law, accountability, regulatory quality, government effectiveness and political stability) on the economic performance in the region, or precisely can we argue that a better governance structure that promotes accountability and reduce corruption can enhance the economic performance of the zone.

However, the debate on the effects of political corruption on economic activity is still inconclusive in the literature. While many argued that corruption hurts economic development because it redirects resources in unproductive direction and instils distortions in the economy. For example, Tanzi and Davoodi (1997) identify four channels through which corruption may have an adverse effect on economic growth: higher public investment, lower government revenues, lower expenditures on business operations and maintenance, and lower quality of public infrastructure. Mauro (1995) also argues that corruption adversely affect economic growth through distortion in investment flow. However, Leff (1964), Hutington (1968) have argued that corruption may serve as an efficient grease in enhancing productive services in an economy with highly complex bureaucratic bottlenecks. Collier (1997) also argues that in a corrupt nation, the expectation for corrupt practices is high, and that can lead to a stable corrupt equilibrium state, and when a nation is in that state, it requires more articulate reform efforts to return such countries to normal position.

Corruption has been identified as an ubiquitous social problem across all the regions of the world but its preponderance is found in Sub-Saharan Africa (SSA) due to lack of willingness and sincerity on the part of the national governments within the region, poverty level of its

citizenry and underdevelopment (Richards et al., 2003). Also, most of the SSA countries are characterised by low Gross National Income per Capita, low life expectancy, low literacy level, lack of access to improved water and, above all, lack of transparency and accountability (Kofele-Kale, 2006; World Development Indicators, 2009).

Kofele-Kale (2006) has highlighted the business culture of Africa as lacking transparency and accountability and compromising democratic institutions. Also, based on the historical context of the fight against corruption in post-colonial Africa, he concluded that the contemporary efforts by African governments to build a corruption free society lack in their degree of adequacy, seriousness and appropriateness and sufficiency. Undoubtedly such situations have led to the region's abysmal aggregate economic performance (Kofele-Kale, 2006).

Although there exist differences in the definition and understanding of the term corruption due to differences in cultural, social, religious and legal settings, this study perceives corruption in its broad sense to include any intentional action or inaction that accords an undeserved benefit to a person or group such that the integrity and accountability of the perpetrator or the institution they represent are undermined. Corruption can be perpetrated at individual level (private corruption), organisational level (corporate corruption) and government level (political corruption). While studies relating to personal and organisational corruptions are predominantly found in psychology, sociology and management disciplines, experts in the field of economics, political science and law have taken the lead in analysing political corruption.

Some of the studies that focussed on corporate corruption have concentrated on different aspects. These include: different forms of corporate corrupt practices (Wu, 2009), the spread and dynamics of corporate corruption (Nieuwenboer and Kaptein, 2008), underlying institutional processes of corporate corruption (Richards et al., 2003), causes of corporate corruption (Trevino and Weaver, 2003; Ashforth and Anand, 2003; Vardi and Weitz, 2004; Fleming and Zyglidopoulos, 2008) and impacts of corporate corruption (Kimuyu, 2007). However, the focus of this current study is political corruption which has been described as the abuse or misuse of public offices, resources, obligations or duties for private (personal or sectional) gain (Szeftel, 1998; 2000). This study therefore attempts to examine the effect of control of political corruption and other governance indicators on the economic growth of SSA countries with a view to making policy recommendations.

The rest of the paper is organized as follows; section 2 has the review of relevant literature, section 3 gives the research methodology and data sources. Section 4 discusses the empirical results; section 5 gives the policy implications and suggestion for further research while section 6 contains the conclusion.

Literature Review

Cases of political corruption are very common in all the regions of the world. As such, corruption is now considered an important governance issue globally. However, due to the preponderance of autocracy, totalitarianism and disregard for the rule of law in the Sub-Saharan Africa, the region has been the main focus of attention regarding this phenomenon. This section first reviews the relationship between corruption and governance as a

springboard to assessing current efforts of control of corruption on macroeconomic performance in the region.

Corruption and Governance

Most of the studies on the relationship between corruption and governance have focused on individual countries rather than regions. For instance, Choi (2007) examined the causality between governance structure (through network relationships supported by traditions and socio-cultural foundations) and administrative corruption in Japan. The study found that such structures aid maladministration and diminish public trust in governments. To reduce corruption and enhance governance effectiveness in Japan, the study recommended citizen participation and diversity management.

Furthermore, according to Ngo (2008), economic rents are generated in China through the government's rationing of production licenses, fixing of prices and imposition of trade quotas with a view to effect industrial plans and development priorities. In his investigation of the links between rent-seeking, economic governance and corruption in China, Ngo's study concluded that rent-seeking is already intertwined with economic governance and it is being used in a corrupt way by agents of the government as they (the agents) collude with business handlers to accrue extra profits through bribery in areas such as construction works, property rights transfers, medical supplies, government procurements and exploration of natural resources. Ngo's conclusion was corroborated by Gao's (2011) study which showed that government interventions that create economic rent do lead to corruption.

Commenting on the danger corruption constitutes to good governance in South Africa, Pillay (2004) stated that "South Africa's complex political design is a contributing factor to the rise of corruption, which has adversely affected stability and trust and which has damaged the ethos of democratic values and principles".

Despite the foregoing studies that focused on individual countries vis-a-vis the link between corruption and governance, a few others adopted a multi-country approach. For example, based on data from 150 developing countries involving 72,000 firms, Gander (2011) developed "a simple model of a firm's decision made under the uncertainty of the success of the bribe of a government official". With this model, he concluded that political instability and the court system are two major factors fuelling corruption in these developing countries. Also, while analysing African politics from the perspectives of corruption and governance, Szeftel (1998) concluded that the governance agenda in the continent "tackles corruption as if it were the cause of democratic and development problems rather than a symptom or consequence of them. Thus it fails to address the deeper political and class forces which drive the politics of clientelism and corruption. And secondly, in their demonization of the state and determination to substitute themselves for the state to force adjustment through, the donors and international agencies undermine the institutional development needed to sustain a more democratic, transparent and accountable political system. The result is that the important institutional structures and principles they seek to mobilize against corruption are unlikely to take root."

Based on the studies reviewed above, it will be safe to state that, if left uncontrolled, corruption will greatly undermine good governance and bad governance provides a potent platform for corruption to thrive – a double edged sword whose grip rests firmly in the hands

of those in charge of state governance. If both governance and control of corruption are not effective, these may have implications for the economy.

Corruption and Macro-Economic Activities

The three main macroeconomic performance areas in which the effects of corruption have been studied in the current body of literature are economic growth, income distribution and foreign direct investment. As regards the impact of corruption on economic growth, most of the studies found that corruption inhibits economic growth through distortion of private investment (Mauro, 1995; 1996) and human capital accumulation (Mo, 2000). In addition to corruption, Mauro (1995) also examined the effects of other governance/institutional factors such as red tape, the efficiency of the judicial system, and variables of political stability on growth while Mo's study emphasised the political instability variable as the most important channel through which corruption affects economic growth.

Furthermore, Mobolaji and Omoteso (2009) investigated the impact of corruption and other governance/institutional factors on economic growth in some selected transitional economies for the period of 1990-2004 based on corruption indices and institutional variables drawn from International Country Risk Guide (ICRG – PRS) analysed through the panel data framework. The study's results supported Mauro's hypothesis that corruption has negative impact on growth in the transitional economies.

Based on a dynamic general equilibrium model of economic growth, Blackburn *et al.* (2005) concluded that the relationship between corruption and economic development is negative also Tanzi and Davoodi's (1997) in a cross-country study found that corruption raises public investment but decreases public productivity. Teles (2007) investigated the relationship among corruption, institutional quality and economic growth. This study further extended the Ehrlich and Lui's (1999) endogenous growth model to identify the institutional conditions that may inhibit corruption and stimulate economic growth. The study's results explained why some countries with a lot of corruption still grow at a high rate.

Meon and Sekkat (2005) examined the relationship between the impact of corruption on growth and investment and the quality of governance in a sample of 63-71 countries between 1970 and 1998. The study found a negative effect of corruption on both growth and investment, a result similar to those of related previous studies. However, the study also found that corruption has a negative impact on growth and this is independent of its impact on investment which differs depending on the quality of governance. The Study's findings suggested that a weak rule of law, an inefficient government and political violence tend to worsen the negative impact of corruption on investment and that corruption slows the process of growth in countries suffering from a weak rule of law and an inefficient government. The study concludes that corruption not only impacts on growth through reduced accumulation of capital but also through other channels. The results of this study show that by reducing the levels of corruption, a country's growth increases even if other aspects of governance remain poor.

Gyimah-Brempong and Gyimah-Brempong's (2006) study used panel data from 61 countries at various levels of economic development over a period of 20 years with a view to investigating regional differences in the impact of corruption on economic growth and income distribution. The results indicated that of the four regions examined, Africa had the largest impact, OECD and Asian countries have the lowest while Latin America has the

largest distributional impact. The study's results were robust to various specifications, measures of corruption, measures of investment, as well as the conditioning variables.

Notwithstanding the conclusions of the foregoing previous research works, not all empirical studies in the current literature have observed a negative relationship between corruption and FDI. Examples of studies that did not find such negative relationship are Hines (1995) and Henisz (2000). Similarly, Andres and Ramlogan-Doson (2011) found an inverse relationship between corruption and income inequality based on a panel data work carried out in Latin America.

Furthermore, Swaleheen and Stansel (2007) attempted to extend the empirical literature on the relationship between corruption and economic growth by incorporating the impact of economic freedom. The study used an econometric model with two improvements on the previous literature: the model accounts for the fact that economic growth, corruption, and investment are jointly determined and the study includes economic freedom explicitly as an explanatory variable. The results of the study led to conclusions that contradicted the generally accepted view in the literature that corruption is harmful to growth. The study found that, *ceteris paribus*, corruption lowers growth when the economic agents have very few choices; however, if people face many choices, corruption helps growth by providing a way around government controls.

The foregoing arguments and counter arguments on the relationship between corruption, governance and economic growth have continued to feature in economics literature for the best part of the last century and the debate still continues unabated till today. The following words of Gyimah-Brempong and Gyimah-Brempong's (2006) provide an enlightening reasoning for the debate: "*although it is generally accepted that corruption has a negative effect on income growth, there are some exceptions. Some countries combine high corruption with slow income growth or stagnation; others combine high rates of corruption with fast income growth..... For example China and Cote d'Ivoire are ranked as equally corrupt, yet while China records an outstanding growth rate, Cote d'Ivoire records a large negative growth rate.*"

Within the context of a developing country, Bangladesh, Paul 's (2010) study found a positive relationship between corruption and economic growth as a result of individuals (with rising income) and burgeoning businesses fanning the flames of corruption in a bid to get their ways through moribund government bureaucratic systems often administered by neglected public officers. He concludes that, "while corruption does not foster growth, it greases the wheels of commerce in Bangladesh".

Using a combination of corruption countries-specific data and indices available from the World Bank, BIC, ICRG and the Transparent International, Blackburn et al. (2010) examined how corrupt practices through bribery and tax evasion consequent upon connivance between households and government officials. The study found that such corrupt practices stifle productive investments that could have fostered economic development. Blackburn et al. (2010) further contributed to the macroeconomic implications of bad governance as epitomised by high incidence of corruption.

Contrary to the work of Glaeser and Saks (2006) which used similar datasets on the United States, Johnson and Yamarik's (2011) study found that corruption plays a significant and causal role in reducing economic growth and investment in the country. This result shows that neither the incidence of corruption nor its detrimental effect on growth is only a developing world's problem; rather, it is a ubiquitous one.

Adam Smith (1776) observed that commerce and manufactures can seldom flourish long in any state which does not enjoy a regular administration of justice; in which the people do not feel themselves secure in the possession of their property; in which the faith of contracts is not supported by law; and in which the authority of the state is not supposed to be regularly employed in enforcing the payment of debts from all those who are able to pay. Commerce and manufactures, in short, can seldom flourish in any state, in which there is not a certain degree of confidence in the justice of government. What this suggests is that, for any sustainable economic growth to occur, there must be high degree of confidence in governance measures. Thus, all the governance measures are supposed to positively impact on economic performance in these countries, while failure to observe these governance measures reduces investors' trust and public confidence in the government as well as impact negatively on the economy.

Finally, an important observation in the current literature on the corruption-development relationship is that the researches on the nexus at regional level is scarce, whereas it is expected that international managers and policy makers working at regional levels may be more interested in regional evidence. Moreover, recent studies have started to discover important relationships at the regional level of analysis. Examples of such studies are Guetet's (2006) work that focused on the Middle East and North Africa, Mobolaji and Omotoso's (2009) research focused on the transitional economies of Eastern Europe and Central Asia and Gyimah-Brempong and Gyimah-Brempong's (2006) work which examined the regional differences from a multi-continental dataset. However, without a single SSA country making the top 30 countries in the corruption perception index (Transparency International, 2011) coupled with governance problems that appear rampant in the region, there could not be a better region upon which to base an assessment of the impact of corruption and governance on economic growth, a research vacuum this study aims to address. Specifically, the study attempts to (1) assess whether political corruption has any impact on the growth of the sample countries and (2) assess the impact of governance on economic growth in the region

In summary, in the literature there are some studies that suggest that corruption impact negatively on economic growth (Mauro 1995) others argue that it could efficiently grease the wheel of commerce (Huntington 1968, Paul 2010). The literature documents weak governance significantly impacting on economic growth. Thus, the study seeks to empirically investigate the control of corruption and other governance indicators on economic growth in the region. It further attempts to evaluate the simultaneous relationship between governance structure and corruption on economic growth in the region.

Research Methods

This section has three sub sections, model specification, estimation technique and data sources for the study.

The Model Specification

The economic growth is represented by the real GDP per capita growth rate (y) and is assumed to be affected by the level of corruption control (COR) as well as other governance variables in the economy such as accountability (ACCT), rule of law (LAW), political stability and absence of violence (POSV), government effectiveness (EFF) and regulatory quality (REG). Thus, a simple growth model was specified where the economic growth is influenced by:

$$y = f(\text{COR}, \text{ACCT}, \text{LAW}, \text{POSV}, \text{EFF}, \text{REG}).$$

The model

$$\Delta Y_{it} = \alpha_0 + \beta_1 \text{COR}_{it} + \varepsilon_t \quad (1)$$

$$\begin{aligned} \Delta Y_{it} = \alpha_0 + \beta_1 \text{COR}_{it} + \beta_2 \text{ACCT}_{it} + \beta_3 \text{LAW}_{it} + \beta_4 \text{POSV}_{it} + \beta_5 \text{EFF}_{it} \\ + \beta_6 \text{REG}_{it} + \varepsilon_t \end{aligned} \quad (2)$$

The dependent variable is the growth rate of the real GDP per capita, and the explanatory variables are control of corruption and other institutional/governance variables. This is similar to the estimation of Hodgson (2006) and Mobolaji and Omoteso (2009). From the above specification, the apriori theoretical expectation is that β_1 is expected to be positive and statistically significant to imply that in the region control of corruption has positive impact on growth, but if it is negative, it may suggest that control of corruption is suboptimal to be able to control the surge of the menace and hence evidence for the efficient grease .

An effective control of corruption measure should impact positively on the rate of growth of respective economies; hence we expect β_1 to be positive and significant. All other governance variables are equally expected to be positive and statistically significant.

The model specifications in equations 1 and 2 above, attempt to test the validity of the first hypothesis. A necessary condition to conclude that control of corruption and other governance measures have an impact on the growth of these economies requires the coefficient of these variables to be statistically significant. The sign of each coefficient suggests the direction of the relationship or effect, while the size give indication of the magnitude of the effect. The coefficient with the highest positive or negative effect deserve closer attention, as this would indicate the highest growth enhancing measure (i.e with highest positive sign) which needs to be pursued aggressively and the highest growth-retarding measure (coefficient with highest negative sign) needs to be analysed with the view to minimizing its impact or reviewing policies to address same ultimately.

Rajan and Zingales (2003) have brought to fore in the literature the issue of simultaneous reforms agenda, where two policies are simultaneously taken together to address its impacts on the dependent variable. Thus, this paper also investigated further by trying to assess the effectiveness of simultaneous policy reform efforts by interacting two governance measures and assess their impacts on growth in the region. This is done by assessing the cross partial derivatives of the variables. If the results suggest that the value is positive, this may indicate that the two policies are complementary and thus can be simultaneously implemented. If they are negative, this may suggest that the variables are substitutes, and thus reform efforts need

to be sequenced in line with Mckinnon (1991) gradual and sequential rather than immediate and simultaneous implementations. In case they are not statistically significant, it may indicate policy ineffectiveness. Thus, the coefficients β_5 and β_6 in model 3 are expected to be significant to suggest policy effectiveness, and the signs would indicate complementarity or substitutability of policy reforms with its attendant effects.

To test for the second hypothesis,

$$\Delta Y_{it} = \alpha_0 + \beta_1 \text{COR}_{it} + \beta_2 \text{LAW}_{it} + \beta_3 \text{POSV}_{it} + \beta_4 \text{EFF}_{it} + \beta_5 (\text{ACCT} * \text{LAW})_{it} + \beta_6 (\text{REG} * \text{COR})_{it} + \beta_7 \text{REG}_{it} + \varepsilon_{it} \quad (3)$$

Where the coefficients are significant, a further assessment of the impact of the simultaneous policy reforms of the two, the partial derivatives of the growth rate with respect to each of the governance indicators were introduced. This allows us to assess the short-run effects of these governance measures on growth and to test the marginal effect of each feature on the growth of the economies of these countries:

$$\frac{\Delta Y_{it}}{\Delta \text{COR}_{it}} = \beta_1 + \beta_6 \text{REG}_{it}$$

$$\frac{\Delta Y_{it}}{\Delta \text{REG}_{it}} = \beta_7 + \beta_6 \text{COR}_{it}$$

$$\frac{\Delta Y_{it}}{\Delta \text{LAW}_{it}} = \beta_2 + \beta_5 / \text{ACCT}_{it}$$

The study is a regional study for 47 Sub-Saharan African countries for period of 8 years, thus a panel econometric approach is adopted. It is a micro-panel data framework. The choice of the panel data technique for this study was to make it possible to allow for differences in the form of unobservable individual country effects. A panel study's ability to control for individual heterogeneity as well as state and time-invariant variables makes it a superior technique to a time series or cross-sectional study (Baltagi, 1995). The framework also gives more informative data, more variability, less co-linearity among variables, more degree of freedom and more efficiency.

In this study, the fixed effect (FE), the random effect (RE) and the Hausman-test (based on the difference between fixed and random effects estimators) were conducted. The fixed effect is appropriate because of the study's focus on a specific set of countries (within the SSA) and its inference is limited to the behaviour of these sets of countries. Although FE is more appropriate, it is often observed that there are too many parameters in the model and thus the possibility of loss of degree of freedom that can be avoided by assuming that the individual effect is random. The RE model is an appropriate specification when drawing a sample out of a large population. The test revealed that the RE is the better estimation method. However, a maximum likelihood estimation method was also used to confirm the robustness of the model.

Data and Data Sources

The governance indicators used in the study are six, these are the voice and accountability, political stability and absence of violence, Rule of law; control of corruption, Government effectiveness and Regulatory quality. The Voice and Accountability indicator measures the extent to which a country's citizens are able to participate in selecting their government; includes freedom of expression; of association; and the existence and degree of a free media. The way to actualize this, includes engagement of civil societies and Non government organizations in election monitoring as it was done in many countries in the recent time (Nigeria, Ghana for example), enactment of the freedom of the press bills. The Political Stability and Absence of Violence/Terrorism indicator measures the likelihood that the government will be destabilised by unconstitutional or violent means, including terrorism. The Government Effectiveness indicator measures the quality of public services and capacity of civil services; the independence of the civil service from political pressures; and the quality of policy formulation. The Regulatory Quality evaluates the ability of the government to provide sound policies and regulations, which enable and promote private sector development. The Rule of Law measures the extent to which agents have confidence in and abide by the rules of society, including the quality of contract enforcement and property rights, the police and the courts, and the likelihood of crime and violence. Finally, Control of Corruption indicator measures the extent to which public power is exercised for private gain, including both petty and grand forms of corruption and "capture" of the state by elites and private interests. For all these measures, the closer the value is to 1, the better the likelihood of better economic performance. As argued by Adams Smith. All these governance measures could be achieved through higher transparency of the government, by publishing its audited accounts,

Some countries even now have good governance committees that includes civil societies, non- governmental organizations, international observers, international funding agencies and other relevant stakeholders that monitor the activities, programs and projects of the governments, this is in Nigeria, Ghana and Cote d'Ivoire.

The indices for corruption and other governance indices were drawn from the PRS group and the Worldwide Governance Indicators of the World Bank for the period 2002-2009 while the real GDP per capita growth were obtained from World Bank Database. In all, we have 47 SSA countries in the sample (see appendix 1). The choice of these countries was premised on the fact that all existing indicators of wealth of nations and wellbeing of their citizens have long established that African countries particularly SSA have performed poorly compared to other regions of the world. Publications such as the World Development Report (World Bank, 2006), the World Economic Outlook (IMF, 2005) and UNDP Human Development Report (UNDP, 2007) have emphasised Africa's dismal economic record along several dimensions. For example, the Human Development Index (UNDP, 2007) asserted that all the twenty-two countries deemed to have low levels of human development were from the African region.

Discussion of Empirical Results

The data sets are summarised in Table I below, which provides the definition and source of each variable, summary statistics and sample period. The correlation matrix between the variables is also provided in Table II. These indices were obtained from ICRG and

Worldwide Governance Indicators of the World Bank as used in many previous empirical studies to measure corruption and Governance (see Kaufmann et al., 2009; World Bank, 2009). The definition of these variables is contained in appendix 2.

Table I: Summary of Dataset Used (Annual Data: 2002 - 2009)

Variables	Definition of Variables	Unit of measurement Sources	Mean	Standard Deviation	Minimum	Maximum
LAW	Rule of law	World Governance Indicator (WGI)	0.46	0.15	0.06	0.88
ACCT	Voice and accountability	World Governance Indicator (WGI)	0.39	0.17	0	0.83
POSV	Political stability and absence of violence	World Governance Indicator (WGI)	0.61	0.19	0	1
EFF	Government effectiveness	World Governance Indicator (WGI)	0.43	0.15	0.11	0.85
REG	Regulatory quality	World Governance Indicator (WGI)	0.46	0.17	0.06	0.95
COR	Control of corruption	World Governance Indicator (WGI)	0.39	0.16	0	0.88
GDP	Real GDP per capita growth rate	World Development Indicator (WDI)	6.61	1.25	0	10.24

Sources: Authors' computation

From table 1, for the period under review, the region has achieved most in terms of political stability, as this records an average of 0.61, where as the region has performed least in terms of control of corruption and voice and accountability with each being 0.39 out of maximum of 1. Apart from political stability measure, at an average, all the governance measures were less than 0.5, this suggests that at an average the region is still having a weak governance structure and this has its impacts on the growth and development in the region.

Table II: Correlation Matrix of the Variables

Variables	LAW	ACCT	POSV	EFF	REG	COR	GDP
LAW	1.000						
ACCT	0.659	1.000					
POSV	0.6862	0.5275	1.000				
EFF	0.6893	0.8081	0.5569	1.000			
REG	0.6462	0.6737	0.5255	0.7070	1.000		
COR	0.6239	0.4023	0.4813	0.5984	0.4628	1.000	
GDP	0.4050	0.3573	0.4846	0.3965	0.5880	0.2634	1.000

Table II gives the correlation matrix, it signifies the degree of association among the variable of interest. A positive (negative) sign also indicates positive (negative) relationship among them; the size also indicates the magnitude of the relationship. In all there is a positive relationship among the variables, though the size differs. Relationship between voice and accountability shows the highest degree of association in the region (0.808), whereas the relationship between control of corruption and measure of economic growth shows the least degree of association (0.263). the most effective governance indicator in terms of its relationship with economic growth is regulatory quality (REG) with 0.588, followed by the absence of political violence and political stability measure (POSV) with 0.485. in all, it can be observed that all variables display considerable variations justifying the use of panel estimation techniques.

The estimation results are presented in Tables III to VII (see appendix 3). Most of the diagnostics in both tables are satisfactory. Both the R^2 and F-test suggest high predictive ability of the independent variables and overall goodness of fit for the models.

Three estimation methods were used. These were the fixed effect, random effect and maximum likelihood method. Also, four different model specifications were estimated. Model 1 presents the estimation results for the first model where the growth equation has only one independent variable (that is, control of corruption). Model 2 gives the estimation results of the growth equation with other determinants (governance/institutional factors), model 3 has the results for the interaction term of both the rule of law and voice and accountability, as well as control of corruption and regulatory quality while model 4 has the squared term to verify the existence of the efficient grease hypothesis.

Model 1

Focusing on model 1, the three estimation techniques report that an effective control of corruption would impact positively on the SSA economies. It suggests that 1 unit change in control of corruption, would lead to 0.83 unit change in the rate of economic growth in these countries. The coefficient of control of corruption is positive and statistically significant at 1 percent. This is in consonance with the a priori expectation and in line with the findings of Henisz (2000) that control of corruption increases the probability of investment and hence growth. However, the R^2 is low, 0.07, suggesting that the variable can only explain 7 per cent of variation on the economic growth. Thus, more explanatory variables were added and the emerging trend was observed.

Model 2

In the second estimation, both political stability and regulatory quality indicators entered the model with positive signs, and are statistically significant at 5%. This indicates that for the period under review, the region has had more reforms in terms of the two above, and this has impacted positively on the regional economic growth. This is also consistent with the result from the correlation matrix which suggests that both governance measures have high degree of association with the measure of economic growth in the region.

However, the region has got to do more policy reforms on government effectiveness as this variable entered the model with a negative sign. There was no sufficient empirical evidence to suggest that other governance indicators impact on these economies for the period under review. Both the rule of law and the voice and accountability indicators did not show any statistically significant impact on economic growth for the period under review

With the inclusion of other institutional/governance variables in model 2, the R^2 improves to 0.378, and the overall fitness of the model, F-test, rejects the null hypothesis of non-significance of the model even at 1 per cent level. However, the coefficient of control of corruption is still positive but statistically not significant. The rule of law is also negative and statistically not significant. The voice and accountability variable is positive but not significant at 5 per cent level. However, Political stability and absence of violence is positive and statistically significant at 5 per cent suggesting a direct relationship with economic growth. On the contrary, government effectiveness is negative but significant at 5 per cent implying an inverse relationship with economic growth. Regulatory quality is positive and significant at 5 per cent level. Thus, in model three, an interaction term of both the rule of law and voice and accountability. These interaction terms were allowed to enter as separate independent variables in the growth equation.

Model 3

This is the model with the interaction terms; again political stability, regulatory quality and government effectiveness indicators have been statistically significant at 5% level, though the signs are different. While the former two emerge with positive signs, the third came with a negative sign. The result further suggests that political stability and regulatory quality in the region have positive impacts on economic growth in the region, the government effectiveness has been seen to impact negatively on the regional economic growth, this further suggests that the quality of the public services in the region is sub-optimal to elicit the desirable growth enhancing effect, and that this poses a great challenge to the economic growth in the region. Thus in terms of policy implication, the governments in the region need to strengthen its policies on political stability and regulatory qualities, while they need to review and try to improve on their efforts in improving on government effectiveness.

With the interaction term for both the rule of law and voice and accountability (ACCT*LAW), the coefficient is positive and statistically significant at 5 per cent, suggesting that efforts at improving both variables simultaneously could have more positive impacts on growth. This is in consonance with the a priori expectation. This also indicates that the two measures are complementary, and that their simultaneous effects would have positive impacts on the economy. However, the interaction term between the control of corruption and regulatory quality was not statistically significant at both 1% or 5% levels.

The results obtained are consistent for all the estimation techniques used, this further confirms the robustness of the techniques employed in the study. Where, the interaction term is statistically significant, the study goes further to assess the marginal effect of the term on economic growth in the region as well as the short run analysis.

The Marginal Effects of Some Governance Indicators on Economic Growth in Sub-Saharan African Countries

To further analyse the effect of governance on economic growth in SSA, marginal effects of the interaction between the voice and accountability index and the rule of law variable (i.e. Acct*Law) were calculated so as to assess their joint effect on economic growth in the region. This is done through the partial derivatives of equation 3 with respect to the two pair of policies above (using model 3 – the model with the interaction term). The marginal effect is obtained by taking the coefficient of the interaction term where it is significant at conventional 5% level. In cases, where the estimated parameter is not significant at the 5% level, a zero value was assigned to the parameter. The results of this exercise are presented in Table VII (in appendix 4) which gives the short-run effects of simultaneous policy reforms and its impact on economic growth in the region. Table VII (in appendix 4) gives the short run effects of each policy reform while holding the other constant. The minimum, maximum and mean values in Table I were used for the computation. While the minimum, maximum and mean indicate the minimum short run value, maximum short run effect and average short run effect respectively. However, for the constraint of space, the column under the mean value is discussed in the study.

The result suggests that the marginal effect of voice and accountability index holding the rule of law constant, would impact more on economic growth in the region with at an average of 1.27 times. However, if the respective countries actively pursue policy at enhancing the rule of law, while holding voice and accountability constant, the resultant effect is that the regional economy would grow about 1.08 times more, if they have not pursued such policies. The implication of these results is that both the voice and accountability and rule of law indicators impact positively on economic growth in the region. Thus, any policy reform that focuses on these two, would lead to more positive impact on growth in the region.

In the light of the foregoing results, governments in these countries need to pursue active policies that would strengthen accountability, regulatory quality and the rule of law if they have to enhance economic growth in their respective countries.

Policy Implications

From the results of this study, both political stability and high regulatory quality in the region have the growth enhancing features and government effectiveness indicator has a growth retarding feature in the region. There are no sufficient empirical evidence to support that the other governance indicators impact significantly on economic growth in the region. The policy implication that can be inferred or drawn from this study, is that policy makers in the region should strengthen its policies at achieving political stability and regulatory quality. This can be done through setting up of many ombudsman commission for dispute resolutions, avoidance of unconstitutional practices or actions, promotion of civic education, ensuring

even regional development, promotion of enabling environment for private sector development through access to finance, encouragement of private-public initiatives among others. The governments also need to improve the quality of public services, promote civil service independence or autonomy and enhance consistency of policy formulations as these are necessary to engender public confidence and improve the economic activities in the region.

Suggestion for Further Research

The study at present is still exploratory and the conclusion from the study is at best suggestive. Further research can probe further why the rules of law, accountability and control of accountability have not had much significant impact on economic growth. This study explores a regional perspective, and it is obvious that these countries do not have similar development pace, while Botswana, South Africa and Seychelles are sometimes considered as middle-income group, Burundi, Niger, Mali are considered as low income group, may be future studies can delineate them along income group for further analysis or simply engage a country specific analysis. Sub-Saharan Africa countries have several sub-regional affiliations, ECOWAS, SADC, UEMOA etc, thus other studies can also analyse the impact of governance on economic growth exploring these different regional groups.

Conclusion

The debate on the effects of corruption on macro-economic performance remains polarised. While some writers have claimed that corruption stifles economic growth and development, others have contended that, in some situations, corruption may be economically desirable because it provides a way out of inefficient regulations and bureaucratic bottlenecks.

In all, most economies attempt to reduce the level of corruption, by embracing high governance. This is an empirical study that investigates the impact of governance measures on economic growth in Sub-Saharan Africa.

It employs a panel econometric approach, and used three estimation techniques, fixed effects, Random effects and maximum likelihood estimation technique.

The study found that political stability and regulatory quality indicators have growth enhancing features, as they impact on economic growth in the region significantly, while government effectiveness impacts negatively on the economic growth in the region. Despite, several anti-corruption policies in the region, the impact of corruption control on economic growth is not very obvious. The study also found that simultaneous implementation of accountability and rule of law indicators has more positive impact on economic growth in the region. Both policies are complementary, and hence can be pursued simultaneously.

The results suggest that reform efforts that aim at enhancing accountability, regulatory quality, political stability and the rule of law have more growth enhancing features and thus should be given more priority, than reform efforts that singly address the issue of control of corruption, since corruption in the region tends to be endemic, systemic and ubiquitous. The impact of such reform efforts on economic growth may not have a short run effect but a long run impact.

Finally, this study has only considered the impact of control of corruption and other governance indicators on economic growth in the region while it has held other growth determinants (such as capital stock, human capital and financial development) constant so as

to deeply analyse the impact of the variables of interest in the model, this might have had some effects on the accuracy of the model and the precision of the estimates. It is therefore suggested that future studies could incorporate these other growth determinants in their assessments.

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Appendix 1: List of SSA Countries Used in the Study

Angola, Benin, Botswana, Burundi, Cameroon, Cape Verde, Central African I
Chad, Comoros, Congo, Congo Democratic Republic, Cote d’Ivoire, Djibouti,
Guinea, Eriteria, Ethiopia, Gabon, Gambia, Ghana, Guinea-Bissau, Kenya, Le
Libya, Madagascar, Malawi, Mali, Mauritania, Mauritius, Mozambique, Nam
Nigeria, Rwanda, Sao Tome and Principe, Senegal, Seychelles, Sierra-Leone,
Sudan, Swaziland, Tanzania, Togo, Uganda, Zambia, Zimbabwe

Appendix 2: Table III-VI Corruption and Growth in Sub-Saharan Africa Economies

Table III: Model 1

Model 1			
Dependent variable real GDP	Fixed effect	Random effect	Maximum likelihood
	Coefficient (Standard Error)	Coefficient (Standard Error)	Coefficient (Standard Error)
Constant	6.29*** (0.16)	6.22*** (0.22)	6.217*** (0.22)
Corruption	0.83** (0.41)	1.00** (0.38)	0.83** (0.41)

Table IV: Model 2

Model 2			
Dependent variable real GDP	Fixed effect	Random effect	Maximum likelihood
	Coefficient (Standard Error)	Coefficient (Standard Error)	Coefficient (Standard Error)
Constant	5.07*** (0.36)	5.06*** (0.36)	4.71*** (0.31)
Corruption	0.52 (0.42)	0.42 (0.41)	0.42 (0.40)
Rule of law	-0.01 (0.63)	-0.09 (0.59)	-0.10 (0.58)
Political stability and absence of violence	0.91** (0.42)	1.18*** (0.39)	1.18 (0.39)
Voice and accountability	0.82* (0.49)	0.64 (0.47)	0.64 (0.46)
Regulatory quality	2.20*** (0.70)	2.87*** (0.59)	2.88*** (0.59)
Government effectiveness	-1.28* (0.70)	-1.23* (0.66)	-1.23* (0.65)

Table V: Model 3

Model 3			
Dependent variable real GDP	Fixed effect	Random effect	Maximum likelihood
	Coefficient (Standard Error)	Coefficient (Standard Error)	Coefficient (Standard Error)
Constant	5.13*** (0.48)	5.03*** (0.45)	5.03*** (0.44)
corruption	1.66 (1.04)	0.63 (0.97)	0.69 (0.98)
Rule of law	-1.20 (0.79)	-1.09 (0.75)	-1.10 (0.74)
Political stability and absence of violence	0.87** (0.42)	1.18*** (0.38)	1.16*** (0.39)
Government effectiveness	-1.39** (0.68)	-1.44** (0.64)	-1.44** (0.64)
Regulatory quality	2.99*** (0.97)	2.99*** (0.89)	3.01*** (0.88)
Acct * law	2.77*** (0.96)	2.27** (0.93)	2.31** (0.92)
Corr*reg	-2.55 (2.03)	-0.51 (1.91)	-0.62 (1.91)

Table VI: Model 4

Model 4			
Dependent variable real GDP	Fixed effect	Random effect	Maximum likelihood
	Coefficient (Standard Error)	Coefficient (Standard Error)	Coefficient (Standard Error)
constant	5.38*** (0.46)	5.15*** (0.42)	5.15*** (0.42)
corruption	0.93 (1.37)	0.43 (1.32)	0.43 (1.31)
Rule of law	-0.08 (0.63)	-0.12 (0.58)	-0.12 (0.58)

Political stability and absence of violence	0.97** (0.43)	1.24*** (0.39)	1.23*** (0.39)
Government effectiveness	-1.32* (0.70)	-1.35** (0.66)	-1.35** (0.65)
Voice and accountability	-1.44 (1.17)	-1.71 (1.11)	-1.71 (1.10)
Regulatory quality	2.12*** (0.69)	2.79*** (0.58)	2.79*** (0.58)
Acct ²	3.05** (1.43)	3.10** (1.34)	3.10*** (1.32)
Corr ²	-0.60 (1.52)	-0.14 (1.47)	-0.15 (1.46)

Appendix 3

Table VII: Marginal Effects of Corruption and Accountability on Economic growth in Some Selected SSA Countries

Growth Effect	Minimum	Maximum	Mean
A) Regulatory Quality holding control of corruption constant	2.99	2.99	2.99
B) control of corruption holding Regulatory Quality constant	0	0	0
C) Accountability Indicator holding Rule of Law constant	0	2.30	1.27
D) Rule of Law holding Accountability Indicator constant	0.17	2.44	1.08
E) Increase in Control of Corruption	0	0	0
F) Increase in Accountability	0	5.06	2.38